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U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NUMBER

**TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. 371**

020358-000100US

U.S. APPLICATION NO. (If known, see 37 C.F.R. 1.5)

09/856435

INTERNATIONAL APPLICATION NO.

PCT/AU99/01043

INTERNATIONAL FILING DATE

23 May 2000

PRIORITY DATE CLAIMED

23 November 1998

TITLE OF INVENTION

FROZEN ALCOHOLIC BEVERAGES

APPLICANT(S) FOR DO/EO/US

Jayanthi Weerasinghe; Samuel Wolf Strunin; and Jerome Bernard Jolson

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☒ is transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ has been transmitted by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States receiving Office (RO/US)
6. ☐ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☒ Amendments as to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
 - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ have been transmitted by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☒ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)). (Unsigned)
10. ☐ A translation of the annexes to the International Preliminary examination Report under PCT Article 36 (35 U.S.C. 371(c)(5))

Items 11. to 16. below, concern document(s) or information included:

11. ☐ An Information Disclosure Statement under 37 C.F.R. 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 C.F.R. 3.28 and 3.31 is included.
13. ☒ A **FIRST** preliminary amendment.

☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information: Copy of International Search Report, copy of International Preliminary Examination

Report.

U.S. APPLICATION NO. (if known, see 37 C.F.R. 1.5) <div style="font-size: 1.2em; font-weight: bold;">09/856435</div>		INTERNATIONAL APPLICATION NO. PCT/AU99/01043		ATTORNEY'S DOCKET NUMBER 020358-000100US	
17. <input checked="" type="checkbox"/> The following fees are submitted: BASIC NATIONAL FEE (37 C.F.R. 1.492(a)(1)-(5)): <div style="margin-left: 20px;"> Search Report has been prepared by the EPO or JPO \$40.00 International preliminary examination fee paid to USPTO (37 C.F.R. 1.482) 670.00 No international preliminary examination fee paid to USPTO (37 C.F.R. 1.482) but international search fee paid to USPTO (37 C.F.R. 1.445(a)(2)) 760.00 Neither international preliminary examination fee (37 C.F.R. 1.482) nor international search fee (37 C.F.R. 1.445(a)(2)) paid to USPTO 970.00 International preliminary examination fee paid to USPTO (37 C.F.R. 1.482) and all claims satisfied provisions of PCT Article 33(1)-(4) 96.00 </div>				CALCULATIONS PTO USE ONLY	
ENTER APPROPRIATE BASIC FEE AMOUNT =				\$ 840	
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).					
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total Claims	29-20=	9	x \$18.00	\$ 162	
Independent Claims	3-3=	0	x \$80.00	\$	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			9	+ \$260.00	\$ 260
TOTAL OF ABOVE CALCULATIONS =				\$ 1262	
Reduction by 1/2 for filing by small entity, if applicable. Verified Small Entity Statement must also be filed (Note 37 C.F.R. 1.9, 1.27, 1.28).				\$	
SUBTOTAL =				\$ 1262	
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 C.F.R. 1.492(f)).				+	\$
TOTAL NATIONAL FEE =				\$ 1262	
Fee for recording the enclosed assignment (37 C.F.R. 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 C.F.R. 3.28, 3.31). \$40.00 per property				+	\$
TOTAL FEES ENCLOSED =				\$	
				Amount to be refunded	\$
				charged	\$ 1262
a. <input type="checkbox"/> A check in the amount of \$_____ to cover the above fees is enclosed. b. <input checked="" type="checkbox"/> Please charge my Deposit Account No. 20-1430 in the amount of \$ 1262 to cover the above fees. c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 20-1430. A duplicate copy of this sheet is enclosed.					
NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.					
SEND ALL CORRESPONDENCE TO: Darin J. Gibby, Esq. Townsend and Townsend and Crew LLP Two Embarcadero Center, 8 th Floor San Francisco, California 94111 Phone: (303) 571-4000			SIGNATURE <div style="text-align: center; margin-top: 20px;"> </div> NAME: Darin J. Gibby <div style="margin-top: 10px;"> 38,464 REGISTRATION NUMBER </div>		

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By: Conny Heron

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Jayanthi Weerasinghe et al.

International Appl No. PCT/AU99/01043

International Filing Date: 23 May 2000

For: FROZEN ALCOHOLIC
BEVERAGES

Examiner:

Art Unit:

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination of the above-referenced application, please enter the following amendments and remarks.

IN THE CLAIMS:

Please replace the claims in PCT/AU99/01043 with the following new claims.

1. A freezable alcoholic beverage comprising alcohol, mixer and a stabilizer.
2. A beverage according to claim 1 which has a crystalline structure when frozen.
3. A beverage according to claim 2 in which the alcohol is selected from a group including wine, spirits or liqueurs.
4. A beverage according to claim 3 in which the mixer consists essentially of only of water.

5. A beverage according to claim 1 in which the stabilizer comprises vegetable gum selected from the group of guar gum, locust bean gum and xanthan gum or a mixture of any of them.

6. A beverage according to claim 1 in which the stabiliser is a dextrin or a mixture of dextrins.

7. A beverage according to claim 5 in which the stabiliser consists essentially of a mixture of locust bean gum, pectin and xanthan gum in the ratio of about 35:15:3.

8. A beverage according to claim 5 in which the stabiliser consists essentially of a mixture of sugar, locust bean gum, pectin and xanthan gum in the ratio of about 47:35:15:3.

9. A beverage according to claim 4 in which the mixer is selected from the group of water, water-based mixers and dairy-based mixers, including milk, cream and yoghurt.

10. A beverage according to any one of claims 1, 5 or 6 further comprising one or more additives selected from the group of preservatives, colourants, flavourants and sweeteners.

11. A beverage according to any one of claims 1, 5 or 6 further comprising one or more of citric acid, modified fats, air or emulsifying agents, gelling agents, thickening agents, anti-foaming agents and firming agents.

12. A beverage according to any one of claims 5 or 6 consisting essentially of a stabiliser, alcohol, citric acid, water, sweetener and one or more additives selected from the group of preservatives, colourants, flavourants and sweeteners.

13. A beverage according to any one of claims 1, 5 or 6 further comprising fruit.

14. A method for preparing a freezable alcoholic beverage, including the step of mixing an alcohol-water solution and a stabiliser so that the stabiliser is dissolved in the alcohol-water solution and the beverage is then frozen.

15. A method according to claim 14 in which the stabiliser consists essentially of a mixture of locus bean gum, pectin and xanthan gum in the ratio of about 35:15:3.

16. A method according to claim 14 in which the stabiliser consists essentially of a mixture of sugar, locust bean gum, pectin and xanthan gum in the ratio of about 47:35:15:3.

17. A method according to any one of claims 15 to 16 further including the step of first dissolving sugar in water before adding to the alcohol-water solution and the stabiliser.

18. A method for preparing a freezable alcoholic beverage, including the steps of:
dissolving sugar in warm water to form a sugar solution;
preparing a solution of citric acid dissolved in water and mixing it into the sugar solution;
separately mixing a stabiliser evenly into hot water and allowing it to hydrate, before adding this mixture to the mixture of solutions of step (b);
subsequently adding an alcohol solution or emulsion to the mixture of solutions of step (c);
adding cold water to make up a predetermined volume.

19. The method of claim 18 further including after step (d) the step of adding one or more additives selected from the group of preservatives, colourants and flavourants.

20. The method of claim 18 or 19 in which stabiliser comprises dextrin or a mixture of dextrans.

21. The method of claim 18 or 19 in which stabiliser consists essentially of a pre-mix of sugar, pectin, locus bean gum and xanthan gum.

22. A method according to claim 21 in which a preservative is added to the initial sugar-water solution of step (a) before the addition of the citric acid.

- 1 23. A method according to claim 22 in which the preservative is sodium
2 benzoate.
- 1 24. A method according to claim 21 in which the alcohol solution is wine.
- 1 25. A method according to claim 21 in which the alcohol solution or
2 emulsion includes water, a water-based mixer or a dairy-based mixer, including milk, cream
3 and yoghurt.
- 1 26. A frozen alcoholic beverage made according to the method of any one
2 of claims 14 or 18.
- 1 27. A frozen alcoholic product comprising a freezable alcoholic beverage
2 according to any one of claims 1 or 5 when contained in a package (as herein defined).
- 1 28. A product according to claim 27, in which the package is composed of
2 foil and plastic.
- 1 29. A product according to claim 28 in which the package is composed of
2 a nylon/polyethylene extrusion laminate.

REMARKS

The above claims are submitted to replace the claims as originally filed in PCT/AU99/01043. Examination of the application, as amended, is respectfully requested. If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 303-571-4000.

Respectfully submitted,

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DE 7041022 v1

FROZEN ALCOHOLIC BEVERAGES

The present invention relates to frozen alcoholic beverages and processes for their preparation, in particular frozen alcoholic cocktails which can be used in hotels, pubs, night clubs, discos or other licensed venues.

- 5 It is difficult to freeze alcohol and produce a crystalline product. When alcohol is frozen either with or without a mixer, a non-crystalline gum is obtained. It is also desirable that such a product, upon being removed from cold storage to ambient temperature during consumption (eg. in normal use), does not quickly dissociate into its component parts. There is also a problem with packaging
- 10 alcoholic products as the alcohol has a tendency to degrade most packaging materials.

An existing alcoholic product which is in a non-liquid form is a product known as "Jellignite". This product is in the form of a jelly which is prepared by mixing jelly crystals with alcohol.

- 15 Accordingly, investigations were carried out into the manufacture of an alcoholic beverage which can be frozen to a crystalline form.

- In one aspect of the present invention there is provided a freezable alcoholic beverage comprising alcohol, mixer and a stabiliser. Preferably the beverage has a crystalline structure when frozen and the mixer consists
- 20 essentially of water.

- Preferably the alcohol is selected from a group including wine, spirits or liqueurs. The alcohol may include wine, spirits or liqueurs. Suitable wines include red wine, white wine and champagne. Examples of spirits include whisky such as Scotch whisky, Irish whisky, Canadian whisky, bourbon, Tennessee whisky,
- 25 American Blended whisky, Japanese whisky or Australian whisky, gin, vodka, tequila, brandy, rum and sake. Suitable liqueurs include fruit-based liqueurs, for example, advocaat, apricot brandy, blackberry brandy, blackberry liqueur, cherry brandy, cointreau, creme de banana, creme de cassis, creme de fraises, creme de framboises, curacao, drambuie, grand marnier, kirsch, maraschino, midori,
- 30 parfait amour, peach brandy, sabra or southern comfort, herb-based liqueurs, for

example, benedictine, bitters, chartreuse, creme de menthe or kummel and plant and nut-based liqueurs, for example, amaretto, anisette, creme de cacao, galliano, goldwasser, kahlua, ouzo, pernod, sambuca or tia maria (many of which are Registered Trade Marks). Generally, each of these exists as an alcohol
 5 solution or emulsion.

The stabiliser is preferably selected so that when the beverage is frozen an edible ice or ice-cream product is formed which is pleasant to the mouth. It has been surprisingly found that suitable stabilisers include vegetable gums (or dextrins) such as those known as NP 3500 Guar Gum (vegetable gum INS no.
 10 412) and NP 217LBG (derived from locust bean gum and known as vegetable gum INS no. 410) supplied by Germantown International Limited. Others which may be used include Mexpectin LC910 or RI461(Registered Trade Mark) and xanthan gum, for example, Keltrol GM (Registered Trade Mark).

Preferably the stabiliser is a dextrin or a mixture of dextrins. More
 15 preferably, the stabiliser is selected from the group of guar gum, locust bean gum and xanthan gum or a mixture of any of them. In particular, it is preferred that the stabiliser consists essentially of a mixture of locust bean gum, pectin and xanthan gum in the ratio of about 35:15:3. It is preferable to pre-mix sugar into the stabiliser to help dispense the gums evenly, such that the sugar-stabiliser
 20 composition is comprised of sugar:locust bean gum:pectin:xanthan gum in the ratio of about 47:35:15:3. This acts as a thickening agent, as well as a stabiliser and texture modifier.

The beverage may also desirably further include a mixer selected from the group of water, water-based mixers and dairy-based mixers, including milk, cream
 25 and yoghurt. The mixer may be water or dairy based. Suitable water based mixers include water *per se*, mineral water, soda water, tonic water, bitter lemon, dry ginger ale, cordial, soft drink such as cola, raspberry or lemonade and fruit or vegetable juices such as orange juice, pineapple juice, lime juice, lemon juice or tomato juice. Examples of dairy based mixers include milk, cream and yoghurt.

30 In one preferred form, the invention provides a beverage consisting

essentially of a stabiliser, alcohol, citric acid, water, sweetener and one or more additives selected from the group of preservatives, colourants, flavourants and sweeteners.

5 The invention also provides a method for preparing a freezable alcoholic beverage, including the step of mixing an alcohol-water solution and a stabiliser so that the stabiliser is dissolved in the alcohol-water solution and the beverage is then frozen. Preferably, the stabiliser consists essentially of a mixture of locus bean gum, pectin and xanthan gum in the ratio of about 35:15:3.

10 The method may also include the step of first dissolving sugar in water before adding in the alcohol-water solution and the stabiliser.

In a preferred form, there is a method for preparing a freezable alcoholic beverage, including the steps of:

- (a) dissolving sugar in warm water to form a sugar solution;
- 15 (b) preparing a solution of citric acid dissolved in water and mixing it into the sugar solution;
- (c) separately mixing a stabiliser evenly into hot water and allowing it to hydrate, before adding this mixture to the mixture of solutions of step (b);
- 20 (d) subsequently adding an alcohol solution or emulsion to the mixture of solutions of step (c);
- (e) adding cold water to make up a predetermined volume.

Preferably, the method further includes after step (d) the step of adding one or more additives selected from the group of preservatives, colourants and flavourants. More preferably, a preservative is also added to the initial sugar-
25 water solution before the addition of the citric acid. The preservative may be sodium benzoate.

It will be appreciated that one or more other known food additives such as colorants, flavourants, sweeteners, for example, citric acid, modified fats, air or emulsifying, gelling, thickening, anti-foaming or firming agents may be included in the beverage. In particular, the use of alcohol flavourants may be advantageous to
 5 reduce the amount of alcohol present in the beverage and assist in the freezing process.

The beverage may also include fruit which can add colour, flavour and thickness. Suitable fruits for this purpose include apples, apricots, avocados, bananas, cherries, grapefruit, lemon, limes, mandarins, mangoes, melons,
 10 oranges, passionfruit, peaches, pears, pineapples, raspberries and strawberries.

The mixing may be achieved by using any suitable known technique, such as, for example, agitation.

The beverage is advantageously stored in a package and frozen until the time of consumption. The package is preferably composed of a material which is
 15 not substantially degraded, when the beverage is frozen or liquid, and impermeable to alcohol. Suitable materials include foil and plastic, for example, a nylon/polyethylene extrusion laminate (available from WR Grace Australia Ltd ACN 004 207 532 as product R0179).

Thus, the present invention also provides a frozen alcoholic product which
 20 comprises a freezable alcoholic beverage as defined above contained in a package.

The term "package" is used herein in its broadest sense and includes any means for containing the beverage such as a parcel, film, container, box or bag. The package is generally sealed so as to prevent leakage of the contents, for
 25 example, by vacuum or heat sealing. A preferred package is a sealed tube.

It will be appreciated that the frozen beverage may also be in the form of a confectionery product such as an ice-stick or ice-cream.

The invention will now be described with reference to the following Examples. These Examples are not to be construed as limiting the invention in any way.

Examples 1 to 5 exemplify one form of the invention. The alcohol contents
5 of each of the formulations in Examples 1 to 5 are as in the following tables. Cheaper ingredients were substituted for the alcohol in two of the varieties, namely, melon liqueur and Wipe Out® for Midori® and Malibu®, respectively. The guar gum and locust bean gum were added to produce a product of acceptable texture which is sufficiently stable.

10 The total soluble solids content in degrees Brix as measured by a standard refractometer of the formulations in Examples 1 to 5 are also as set out in the attached tables.

The two gums are slowly added in powder form to approximately half of the
total amount of water required and mixed under agitation at an ambient
15 temperature. Once the gums have dissolved into the water, the gum and water mixture is left to stand for a period of at least fifteen minutes. This allows the gums to hydrate before adding any of the other components. The alcohol component is then added together with the flavouring (if any). The remaining components and the remainder of the water are then added and the mixture
20 stirred gently for five minutes to ensure complete and consistent mixing.

The formulation is then subjected to a brix reading which should be about 15°. The mixture is then packed into tubes as described above, heat sealed and frozen up to the time of consumption. Tubes of a 35ml volume have been found convenient.

25 Freezing stability was assessed by aiming to detect organoleptic changes in textural qualities between samples frozen for several weeks and samples thawed and refrozen repeatedly over that time. No textural changes were detected.

It is considered that a temperature of about -15°C (as found in a typical refrigerator freezer box) is desirable for freezing and storing the ice-stick product.

Example 1 - Formulation for Vodka and Orange Frozen Alcoholic Ice Confection

COMPONENT	SPECIFICATION	SUPPLIER	PERCENTAGE % (by weight)
Vodka	37% alc/vol, 14° brix	Karloff (brand)	16.2
Vodka flavouring (natural)	code: 9/A03731C	Dragoco Australia	0.8 to 1%
Orange fruit juice cordial	33° brix	Home Brand (supermarket)	38.6
Locust bean gum	code: LOGGUM06	Scalzo Food Industries	0.06
Guar gum	FGF-1 (very fast hydration)	Henkel	0.04
Water			44.3

5

Example 2 - Formulation for Vodka and Raspberry Frozen Alcoholic Ice Confection

COMPONENT	SPECIFICATION	SUPPLIER	PERCENTAGE % (by weight)
Vodka	37% alc/vol, 14° brix	Karloff (brand)	16.2
Vodka flavouring (natural)	code: 9/A03731C	Dragoco Australia	0.8
Raspberry flavoured cordial	29° brix	Savings (supermarket)	43.9
Locust bean gum	code: LOGGUM06	Scalzo Food Industries	0.06
Guar gum	FGF-1 (very fast hydration)	Henkel	0.04
Water			39.0

Example 3 - Formulation for Scotch and Cola Frozen Alcoholic Ice Confection

COMPONENT	SPECIFICATION	SUPPLIER	PERCENTAGE % (by weight)
Scotch Whisky	37% alc/vol, 14.5° brix	Carlton Club (brand)	16.2
Whisky flavouring (natural)	code: 6/059075	Dragoco Australia	0.4 to 0.5 or 0.6
Cola flavoured cordial	42° brix	KiaOra (supermarket)	30.1
Locust bean gum	code: LOCGUM06	Scalzo Food Industries	0.06
Guar gum	FGF-1 (very fast hydration)	Henkel	0.04
Water			53.2

Example 4 - Formulation for Malibu and Pineapple Frozen Alcoholic Ice Confection

COMPONENT	SPECIFICATION	SUPPLIER	PERCENTAGE % (by weight)
Wipeout	21% alc/vol, 26° brix	Grunters (brand)	28.6
Coconut rum and pineapple flavouring	Rum flavouring 9/A04891 and pineapple flavouring 9/693148	Dragoco Australia	0.4 to 0.6
Pineapple crush fruit juice cordial	43.5°	Golden Circle (supermarket)	17.1
Locust bean gum	code: LOCGUM06	Scalzo Food Industries	0.06
Guar gum	FGF-1 (very fast hydration)	Henkel	0.04
Water			53.6 to 53.8

5

N.B: No flavouring is added to the product in this example.

Example 5 - Formulation for Midori and Lemonade Frozen Alcoholic Ice Confection

COMPONENT	SPECIFICATION	SUPPLIER	PERCENTAGE % (by weight)
Melon liqueur	22.9% alc/vol, 38° brix	Seagram's (brand)	26.2
Melon flavouring (N.I.)	code: 6/062830	Dragoco Australia	0.4 to 0.6
Lemonade soft drink base	58.5° brix	Schweppes	8.6
Locust bean gum	code: LOGGUM06	Scalzo Food Industries	0.06
Guar gum	FGF-1 (very fast hydration)	Henkel	0.04
Water			64.7

It will be apparent to one skilled in the art that other flavourings could be used in further formulations of a freezable alcoholic beverage according to the invention. Other formulations of the invention could include a flavouring or drink
5 base which is a dairy product.

Each of these products has 15° brix and 6% alcohol in the final product, and will remain frozen at -15°C.

In Examples 6 to 11, another aspect of the invention is described being an industrially applicable method of manufacturing a freezable alcoholic beverage.
10 The beverage produced by each of these examples has a brix reading of 14.5° and an alcoholic content of 6.5% w/v. The brix reading is the product largely of the dissolved sugar (both added sugar and sugar from wine). The acid content varies from 0.2 to 0.3% w/v Anhydrous Citric Acid ("ACA"). The acid reading is specified in each example.

15 The examples are all made by the following method to manufacture 1000 litre batches. The components are added in the amounts specified in the table in each of the examples.

To manufacture the freezable alcoholic beverage of this aspect of the invention, the sugar (except for a small proportion equivalent to about 4 times the

weight of the stabiliser being used) is dissolved in a minimal quantity of warm water (generally 4 to 5 times the amount by weight of the sugar is sufficient at a temperature of 40 to 50°C). While an increased temperature will facilitate dissolving of the sugar, it is desirable that the temperature of the overall mixture not be too high in later steps so as to minimise the loss of flavouring vapours and the like (eg, from wine). Alternatively, liquid sugar syrup (of a given brix level) may be used with a comparable equivalent level of sugar to the amount specified in each table. The sodium benzoate, (a known preservative, INS no. 211) is dissolved in a separate amount of hot water before being added to the main tank containing the sugar dissolved in water. All contents are then mixed well. The citric acid is then also dissolved separately in hot water and again added to the main tank, after the sodium benzoate.

The component identified as the "stabiliser" in each table is pre-formulated in bulk prior to this process. This stabiliser is dry blended with the withheld proportion of the sugar being about 4 times the weight of the stabiliser. The dry blending occurs with a sugar:stabiliser ratio of about 4:1. The dry blended mixture is then slowly added to a separate tank of hot water (sufficient water to make a 1 to 2% solution, eg 150 to 250 litres is used) with good agitation and allowed to hydrate for 30 minutes. It is important that this solution does not have any visible gum lumps or spots. The stabiliser solution is then added to the main tank and mixed well. Next, the wine is added and mixed well into the main tank. Finally, colours and flavours are added to the main tank and mixed well. Cold water is then added to make up the volume to 1000 litres, again with good mixing.

For health reasons, it may be desirable to pasteurise the product before dispensing it into individual packaging. Wild yeast may be introduced from the sugar or wine, or possibly other components. Pasteurisation, and the methods of achieving it, are known to one skilled in the art.

The components for Examples 6 to 11 are set out in the following tables. In the following tables, abbreviations are used as follows:

• Ni - nature identical

- FI - flavour
 - Pmx - premix
 - Col - colour
 - Pwd - powder
- 5 • BBAA - Bush Boake Allen Australia Ltd ACN 004 269 658 of 310 Dandenong Valley Highway, Dandenong, Victoria, 3175, Australia

Further, the numerical codes adjacent to components is a product number for the supplier listed in the supplier column. Where no supplier is listed, the product is widely commercially available.

- 10 The component identified as "56-4458 water ice stabiliser" is a mixture of sugar (47%) and vegetable gums, namely locust bean (carob bean) gum (INS no. 410) 35%, pectin (INS no. 440(a)) 15% and xanthan gum (INS no. 415) 3% (percentages being by weight).

Example 6 - Formulation for Bourbon and Cola Frozen Alcoholic Ice Confection

15

Acid - 0.2% w/v ACA

COMPONENT	SUPPLIER	PERCENTAGE % (by weight)
Sugar		130.00 kg
Sodium Benzoate		0.47 kg
Citric Acid Anhydrous		1.00 kg
56-4458 water ice stabiliser	BBAA	2.50 kg
Wine (22%)	Southcorp	296.00 litres
11-3502 Citraroma Cola FI Pmx	BBAA	2.00 litres
11-1528 Ni Whisky FI	BBAA	0.70 litres
Water		To make total volume of 1000 litres

Example 7 - Formulation for Melon and Lemon Frozen Alcoholic Ice Confection*Acid - 0.2% w/v ACA*

COMPONENT	SUPPLIER	PERCENTAGE % (by weight)
Sugar		130.00 kg
Sodium Benzoate		0.47 kg
Citric Acid Anhydrous		1.00 kg
56-4458 water ice stabiliser	BBAA	2.50 kg
Wine (22%)	Southcorp	296.00 litres
06-0404 Natural Sol Lemon FI	BBAA	1.50 litres
05-5000Ni Melon FI	BBAA	0.12 litres
Brilliant Blue Col Pwd		0.0005 kg
Tartrazine Col Pwd		0.01 kg
Water		To make total volume of 1000 litres

Example 8 - Formulation for Rum Pine and Coconut Frozen Alcoholic Ice5 **Confection***Acid: 0.2% w/v ACA*

COMPONENT	SUPPLIER	PERCENTAGE % (by weight)
Sugar		130.00 kg
Sodium Benzoate		0.47 kg
Citric Acid Anhydrous		1.25 kg
56-4458 water ice stabiliser	BBAA	2.50 kg
Wine (22%)	Southcorp	296.00 litres
07-8678 Ni Pineapple FI	BBAA	1.00 litres
08-9557Rum FI	BBAA	1.50 litres
03-4296 Ni Coconut FI	BBAA	0.05 litres
Tartrazine Col Pwd		0.01 kg
Water		To make total volume of 1000 litres

Example 9 - Formulation for Vodka Lemon Lime Frozen Alcoholic Ice Confection

Acid: 0.3% w/v ACA

COMPONENT	SUPPLIER	PERCENTAGE % (by weight)
Sugar		130.00 kg
Sodium Benzoate		0.47 kg
Citric Acid Anhydrous		2.00 kg
56-4458 water ice stabiliser	BBAA	2.50 kg
Wine (22%)	Southcorp	296.00 litres
05-9006 Natural Sol Lemon FI	BBAA	4.00 litres
Water		To make total volume of 1000 litres

Example 10 - Formulation for Vodka & Orange Frozen Alcoholic Ice Confection

Acid: 0.2% w/v ACA

COMPONENT	SUPPLIER	PERCENTAGE % (by weight)
Sugar		130.00 kg
Sodium Benzoate		0.47 kg
Citric Acid Anhydrous		1.00 kg
56-4458 water ice stabiliser	BBAA	2.50 kg
Wine (22%)	Southcorp	296.00 litres
07-2241 Natural Sol Orange FI	BBAA	3.00 litres
Sunset Yellow Col Pwd		0.10 kg
Water		To make total volume of 1000 litres

Example 11 - Formulation for Vodka & Raspberry Frozen Alcoholic Ice Confection*Acid: 0.2% w/v ACA*

COMPONENT	SUPPLIER	PERCENTAGE % (by weight)
Sugar		130.00 kg
Sodium Benzoate		0.47 kg
Citric Acid Anhydrous		1.00 kg
56-4458 water ice stabiliser	BBAA	2.50 kg
Wine (22%)	Southcorp	296.00 litres
08-4246 Ni Raspberry Fl No. 1	BBAA	4.00 litres
22-1762 Caramel Colour 'N'	BBAA	0.20 kg
Ponceau Col Pwd		0.03 kg
Water		To make total volume of 1000 litres

After the manufacturing process described above, the end product is, at
 5 room temperature, a relatively non-viscous liquid which is easily handled.
 Packages manufactured as described above, such as in the form of a tube closed
 at one end can then be filled from the main tank containing the mixture. Once
 filled, the open end of the tube may be closed, for example by heat sealing. The
 entire package may then be frozen, and kept in that form until opened by a
 10 consumer for immediate consumption.

It will also be understood that the term "comprises" or its grammatical
 variants as used herein is equivalent to the term "includes" and is not to be taken
 as excluding the presence of other elements or features.

It will be understood that the invention disclosed and defined herein
 15 extends to all alternative combinations of two or more of the individual features
 mentioned or evident from the text. All of these different combinations constitute
 various alternative aspects of the invention.

CLAIMS

The invention is defined by the following claims.

- 1 A freezable alcoholic beverage comprising alcohol, mixer and a stabiliser.
- 2 A beverage according to claim 1 which has a crystalline structure when frozen.
- 3 A beverage according to claim 1 or 2 in which the alcohol is selected from a group including wine, spirits or liqueurs.
- 4 A beverage according to any one of claims 1 to 3 in which the mixer consists essentially or only of water.
- 5 A beverage according to any one of claims 1 to 4 in which the stabiliser comprises vegetable gum selected from the group of guar gum, locust bean gum and xanthan gum or a mixture of any of them.
- 6 A beverage according to any one of claims 1 to 4 in which the stabiliser is a dextrin or a mixture of dextrins.
- 7 A beverage according to claim 5 or 6 in which the stabiliser consists essentially of a mixture of locust bean gum, pectin and xanthan gum in the ratio of about 35:15:3.
- 8 A beverage according to claim 5 or 6 in which the stabiliser consists essentially of a mixture of sugar, locust bean gum, pectin and xanthan gum in the ratio of about 47:35:15:3.
- 9 A beverage according to any one of the preceding claims further including a mixer selected from the group of water, water-based mixers and dairy-based mixers, including milk, cream and yoghurt.
- 10 A beverage according to any one of the previous claims further comprising

one or more additives selected from the group of preservatives, colourants, flavourants and sweeteners.

- 11 A beverage according to any one of the previous claims further comprising one or more of citric acid, modified fats, air or emulsifying agents, gelling agents, thickening agents, anti-foaming agents and firming agents.
- 12 A beverage according to any one of claims 5 to 8 consisting essentially of a stabiliser, alcohol, citric acid, water, sweetener and one or more additives selected from the group of preservatives, colourants, flavourants and sweeteners.
- 10 13 A beverage according to any one of the previous claims further comprising fruit.
- 14 A method for preparing a freezable alcoholic beverage, including the step of mixing an alcohol-water solution and a stabiliser so that the stabiliser is dissolved in the alcohol-water solution and the beverage is then frozen.
- 15 15 A method according to claim 14 in which the stabiliser consists essentially of a mixture of locus bean gum, pectin and xanthan gum in the ratio of about 35:15:3.
- 16 A method according to claim 14 in which the stabiliser consists essentially of a mixture of sugar, locust bean gum, pectin and xanthan gum in the ratio of about 47:35:15:3.
- 20 17 A method according to any one of claims 14 to 16 further including the step of first dissolving sugar in water before adding to the alcohol-water solution and the stabiliser.
- 18 A method for preparing a freezable alcoholic beverage, including the steps of:
- 25 (a) dissolving sugar in warm water to form a sugar solution;

- (b) preparing a solution of citric acid dissolved in water and mixing it into the sugar solution;
- (c) separately mixing a stabiliser evenly into hot water and allowing it to hydrate, before adding this mixture to the mixture of solutions of step (b);
- (d) subsequently adding an alcohol solution or emulsion to the mixture of solutions of step (c);
- (e) adding cold water to make up a predetermined volume.
- 19 The method of claim 18 further including after step (d) the step of adding one or more additives selected from the group of preservatives, colourants and flavourants.
- 20 The method of claim 18 or 19 in which stabiliser comprises dextrin or a mixture of dextrans.
- 21 The method of claim 18 or 19 in which stabiliser consists essentially of a pre-mix of sugar, pectin, locus bean gum and xanthan gum.
- 22 A method according to any one of claims 18 to 21 in which a preservative is added to the initial sugar-water solution of step (a) before the addition of the citric acid.
- 23 A method according to claim 22 in which the preservative is sodium benzoate.
- 24 A method according to any one of claims 18 to 23 in which the alcohol solution is wine.
- 25 A method according to any one of claims 18 to 23 in which the alcohol solution or emulsion includes water, a water-based mixer or a dairy-based mixer, including milk, cream and yoghurt.

- 26 A frozen alcoholic beverage made according to the method of any one of claims 14 to 25.
- 27 A frozen alcoholic product comprising a freezable alcoholic beverage according to any one of claims 1 to 13 when contained in a package (as herein defined).
- 28 A product according to claim 27, in which the package is composed of foil and plastic.
- 29 A product according to claim 28 in which the package is composed of a nylon/polyethylene extrusion laminate.
- 30 A product comprising a freezable alcoholic beverage according to any one of claims 1 to 13 shaped in the form of an ice-stick or ice-cream.

ABSTRACT

The invention relates to a freezable alcoholic beverage comprising alcohol, a mixer (such as water) and a stabiliser. The stabiliser may comprise various dextrans or vegetable gums. A method of producing a freezable alcoholic beverage is also described.

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Attorney Docket Number 020358-000100US

First Named Inventor Jayanthi Weerasinghe

COMPLETE IF KNOWN

Application Number 09/856,435

Filing Date May 22, 2001

Group Art Unit

Examiner Name

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

FROZEN ALCOHOLIC BEVERAGES

the specification of which

(Title of the Invention)

☒ is attached hereto

OR

☐ was filed on (MM/DD/YYYY) [] as United States Application Number or PCT International

Application Number [] and was amended on (MM/DD/YYYY) [] (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
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PCT/AU99/01043	PCT	23 May 2000	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

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☐ A petition has been filed for this unsigned inventor

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☒ Additional inventors are being named on the 1 supplemental Additional Inventor(s) sheet(s) PTO/ISB/02A attached hereto.

DECLARATION

ADDITIONAL INVENTOR(S)
Supplemental Sheet
Page 3 of 3

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Application Number	09/856,435
Filing Date	May 22, 2001
First Named Inventor	Jayanthi Weerasinghe
Title	FROZEN ALCOHOLIC BEVERAGES
Group Art Unit	
Examiner Name	
Attorney Docket Number	020358-000100US

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Samuel Strumia

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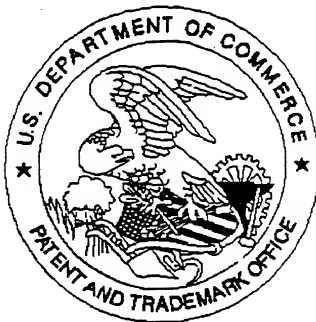
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